WHAT IS CLAIMED IS:

1. A magnetic signal recording method, comprising the step of:

recording arbitrary information in a region on a magnetic recording medium where a coercive force has been varied with local heating, in accordance with a magnetic field from a magnetic recording head,

wherein an edge of a recordable region on said magnetic recording medium is located in a position in which substantial equality is attained between (a) a coercive force in the region where the coercive force on said magnetic recording medium has been varied, and (b) magnetic field intensity in an in-track position in which a magnetic field distribution generated by said magnetic recording head is lowered at a greatest rate.

2. The magnetic signal recording method as set forth in Claim 1, wherein said magnetic recording medium and said magnetic recording head, which records a magnetic bit, have a space between themselves in a direction vertical to a film surface of said magnetic recording medium, said space being smaller than a length of the magnetic bit with respect to the track.

3. The magnetic signal recording method as set

forth in Claim 1, wherein said magnetic recording medium has a film thickness thinner than the length of the magnetic bit with respect to the track, where the magnetic bit is recorded by said magnetic recording head.

4. The magnetic signal recording method as set forth in Claim 1, wherein said magnetic recording head applies and distributes a recording magnetic field in a rectangular shape on said magnetic recording medium.

5. The magnetic signal recording method as set forth in Claim 1, wherein the edge of the recordable region is positioned in a region where a temperature distribution of a heated magnetic recording medium makes concentric circles.

6. The magnetic signal recording method as set forth in Claim 1, wherein said magnetic recording medium is a magnetic film whose coercive force is lowered at a greater rate as a temperature rises in a region having a low temperature within a temperature range than a region having a high temperature within the temperature range, where the coercive force and the magnetic field intensity are equal within the

temperature range.

7. A magnetic signal recording method, comprising the step of:

recording arbitrary information in a region on a magnetic recording medium where a coercive force has been varied with local heating, in which a single-magnetic polar head is used as a magnetic recording head,

said magnetic recording medium having an axis of easy magnetization vertical to a film surface of said magnetic recording medium, and said single-magnetic polar head generating a magnetic field that has a component vertical to the film surface, while having a main magnetic pole wider than a track pitch,

wherein an edge of a recordable region on said magnetic recording medium is located in a position where substantial equality is attained between (a) a coercive force in the region where the coercive force on said magnetic recording medium has been varied, and (b) a component of magnetic field intensity of the single-magnetic polar head in a position in which the component is lowered at a greatest rate in a trailing edge of the main magnetic pole in the track direction, said component being vertical to the film surface.

8. The magnetic signal recording method as set forth in Claim 7, wherein said magnetic recording medium, which has the axis of easy magnetization vertical to the film surface of said magnetic recording medium, includes a soft magnetic layer.

9. The magnetic signal recording method as set forth in Claim 7, wherein said magnetic recording medium is a magnetic recording medium having high magnetic anisotropy in a vertical direction.

10. The magnetic signal recording method as set forth in Claim 7, wherein said magnetic recording medium and said magnetic recording head, which records a magnetic bit, have a space between themselves in a direction vertical to a film surface of said magnetic recording medium, said space being smaller than a length of the magnetic bit with respect to the track.

11. The magnetic signal recording method as set forth in Claim 7, wherein said magnetic recording medium has a film thickness thinner than the length of the magnetic bit with respect to the track, where the magnetic bit is recorded by said magnetic recording

head.

12. The magnetic signal recording method as set forth in Claim 7, wherein said magnetic recording head applies and distributes a recording magnetic field in a rectangular shape on said magnetic recording medium.

13. The magnetic signal recording method as set forth in Claim 7, wherein the edge of the recordable region is positioned in a region where a temperature distribution of a heated magnetic recording medium makes concentric circles.

14. The magnetic signal recording method as set forth in Claim 7, wherein said magnetic recording medium is a magnetic film whose coercive force is lowered at a greater rate as a temperature rises in a region having a low temperature within a temperature range than a region having a high temperature within the temperature range, where the coercive force and the magnetic field intensity are equal within the temperature range.

15. A magnetic signal recording method, comprising the step of:

recording arbitrary information in a region on a magnetic recording medium where a coercive force has been varied with local heating in which a ring head is used as a magnetic recording head,

said magnetic recording medium having an axis of easy magnetization parallel to a film surface of said magnetic recording medium, and said ring head generating a magnetic field having a component parallel to the film surface, while having a ring head recording gap width that is wider than a track pitch,

wherein an edge of a recordable region on said magnetic recording medium is located in a position in which substantial equality is attained between (a) a coercive force in the region where the coercive force on said magnetic recording medium has been varied, and (b) a component of magnetic field intensity of the ring head in a position in which the component is lowered at a greatest rate in a trailing edge of the ring head recording gap in the track direction, said component being parallel to the film surface.

16. The magnetic signal recording method as set forth in Claim 15, wherein said magnetic recording medium is a magnetic recording medium having high magnetic anisotropy in an in-plane direction.

17. A magnetic signal recording method, comprising the step of:

recording arbitrary information in a region on a magnetic recording medium where a coercive force has been varied with local heating in which a ring head is used as a magnetic recording head,

said magnetic recording medium having an axis of easy magnetization vertical to a film surface of said magnetic recording medium, and said ring head generating a magnetic field having a component vertical to the film surface, while having a ring head recording gap width that is wider than a track pitch,

wherein an edge of a recordable region on said magnetic recording medium is located in a position in which substantial equality is attained between (a) a coercive force in the region where the coercive force on said magnetic recording medium has been varied, and (b) a component of magnetic field intensity of the ring head in a position in which the component is lowered at a greatest rate in a vicinity of a position right below a leading edge of the ring head recording gap in the track direction, said component being vertical to the film surface.

18. A magnetic recording-reproduction apparatus,

comprising:

magnetic signal recording means for recording a magnetic signal in accordance with a magnetic signal recording method; and

magnetic signal reproduction means for reproducing a magnetic signal recorded in a magnetic recording medium by said magnetic signal recording means,

said magnetic signal recording method including the step of:

recording arbitrary information in a region on said magnetic recording medium where a coercive force has been varied with local heating, in accordance with a magnetic field from a magnetic recording head, wherein an edge of a recordable region on said magnetic recording medium is located in a position in which substantial equality is attained between (a) a coercive force in the region where the coercive force on said magnetic recording medium has been varied, and (b) magnetic field intensity in an in-track position in which a magnetic field distribution generated by said magnetic recording head is lowered at a greatest rate.